

Graphing Quadratics Review Worksheet

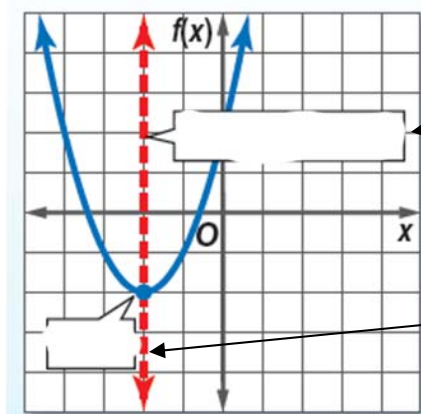
Name _____

Fill in each blank using the word bank.

vertex	minimum	axis of symmetry	x-intercepts
parabola	maximum	zeros/roots	$ax^2 + bx + c$

1. Standard form of a quadratic function is $y =$ _____

2. The shape of a quadratic equation is called a _____



3. _____

4. _____

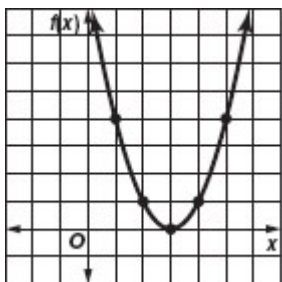
5. When the vertex is the highest point on the graph, we call that a _____.

6. When the vertex is the lowest point on the graph, we call that a _____.

7. Our solutions are the _____.

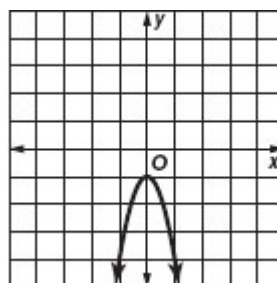
8. Solutions to quadratic equations are called _____.

Determine whether the quadratic functions have two real roots, one real root, or no real roots. If possible, list the zeros of the function.



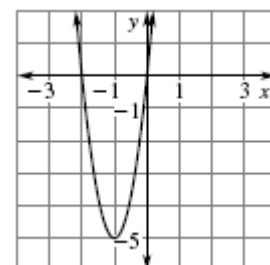
9. Number of roots: _____

Zero(s): _____



10. Number of roots: _____

Zero(s): _____



11. Number of roots: _____

Zero(s): _____

12. Given the graph, identify the following.

Axis of symmetry: _____

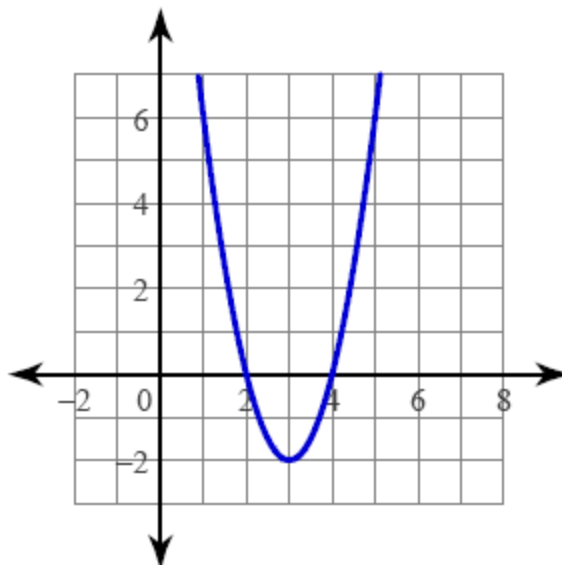
Vertex: _____

How many zeros: _____ which are: _____

****What are the factors?** _____

Domain: _____

Range: _____



Graph the following quadratic functions

Remember: **Option 1:** If it factors, find the zeros.

 The middle of the two factors is the axis of symmetry.

Option 2: If it doesn't factor, find the axis of symmetry with $x = \frac{-b}{2a}$

Plug the x -value into the original equation to find the y -value of the vertex. The y -intercept is at $(0, c)$

13. $y = x^2 - 2x - 3$

Identify the zeros/roots: _____ and _____

Does it have a minimum or maximum? _____

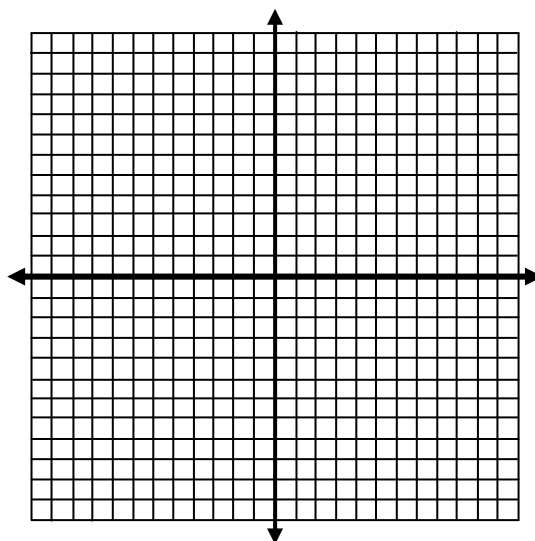
Axis of symmetry: _____ Vertex: _____

y -intercept: _____

Domain: _____ Range: _____

Graph at least 5 points

****What are the factors?** _____



14. $y = -x^2 - 4x + 5$

Identify the zeros/roots: _____ and _____

Does it have a minimum or maximum? _____

Axis of symmetry: _____ Vertex: _____

y-intercept: _____ Graph at least 5 points

Domain: _____ Range: _____

What are the factors? _____

15. $y = x^2 + 4x + 7$

Axis of symmetry: _____ Vertex: _____

Max or Min? _____

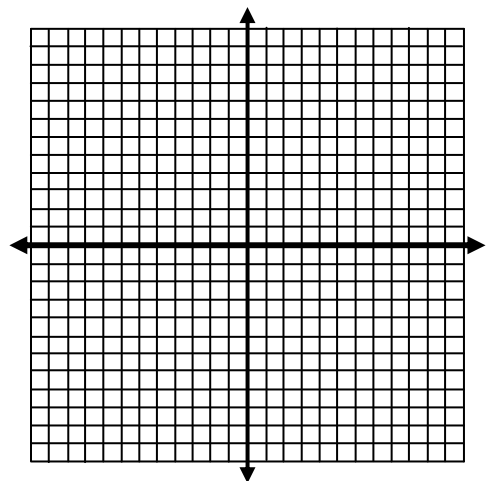
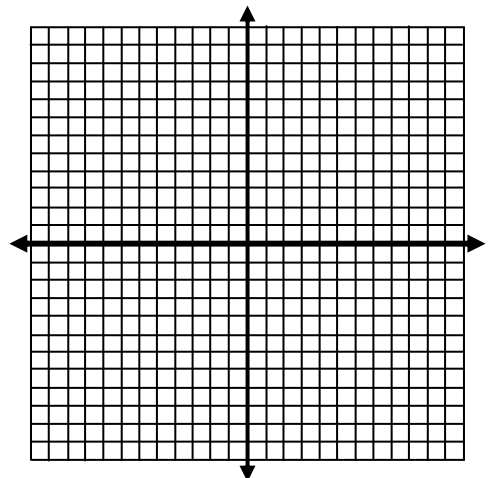
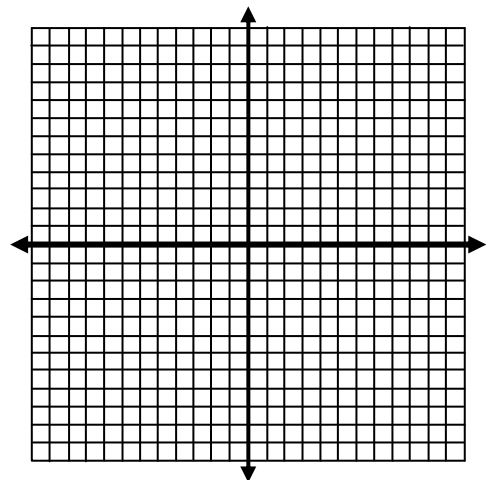
y-intercept: _____ Graph at least 3 points

16. $y = -x^2 - 2x + 2$

Axis of symmetry: _____ Vertex: _____

Max or Min? _____

y-intercept: _____ Graph at least 5 points



17. A bottlenose dolphin jumps out of the water. The path the dolphin travels can be modeled by $h = -0.2d^2 + 2d$, where **h** represents the height of the dolphin and **d** represents horizontal distance.

a. What is the maximum height the dolphin reaches?

b. How far did the dolphin jump?

9.1 Review Answers

1. $ax^2 + bx + c$

2. parabola

3. axis of symmetry

4. vertex

5. maximum

6. minimum

7. x-intercepts

8. zeros or roots

9. 1; 3

10. 0; none

11. 2; -2 and 0

12. $x = 3$; (3, -2)

2; 2 and 4

all reals; $y \geq -2$

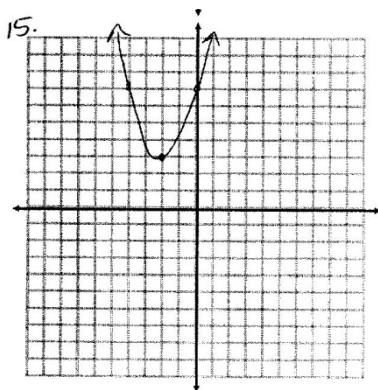
factors: $(x - 2)(x - 4)$

15. critical values

$x = -2$; (-2, 3)

minimum

(0, 7)



13. factor

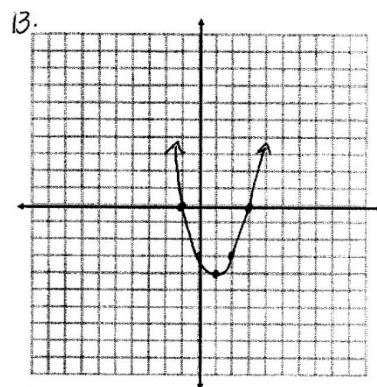
-1 and 3

minimum

$x = 1$; (1, -4)

(0, -3)

all reals; $y \geq -4$



factors: $(x + 1)(x - 3)$

14. factor

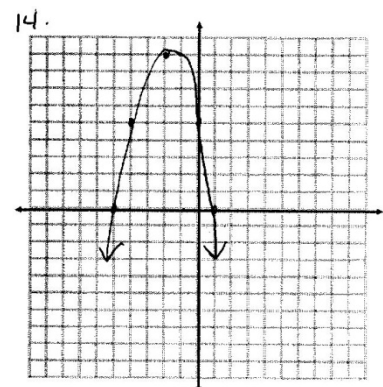
-5 and 1

maximum

$x = -2$; (-2, 9)

(0, 5)

all reals; $y \leq 9$



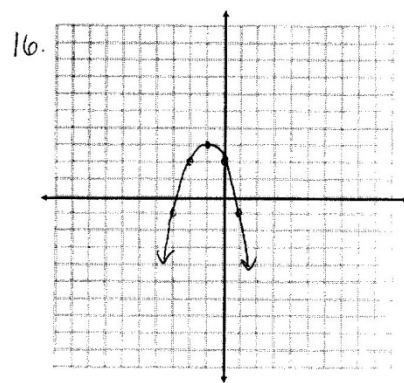
factors: $(x + 5)(x - 1)$

16. critical values

$x = -1$; (-1, 3)

maximum

(0, 2)



17. a. 5 feet

b. 10 feet